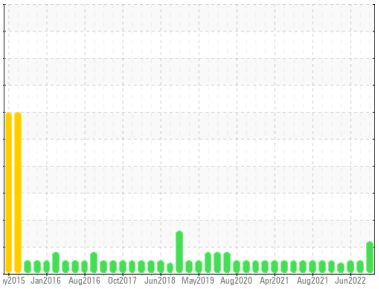
PROBLEM SUMMARY

Sample Rating Trend

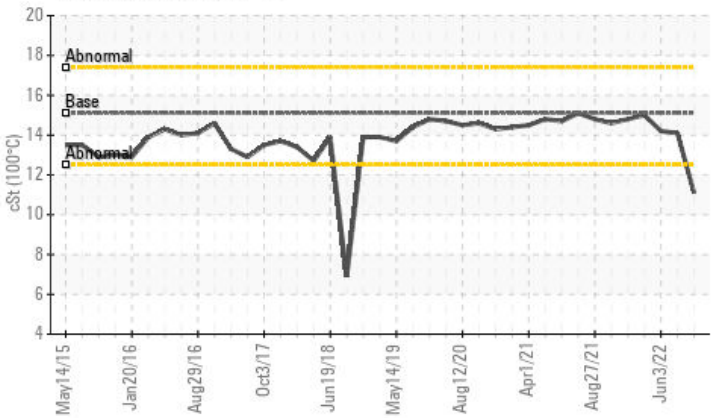


WEAR

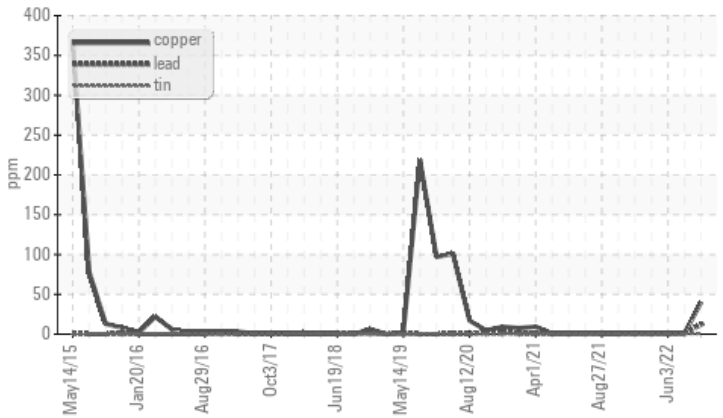
Machine Id
3634C
Component
Natural Gas Engine
Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Viscosity @ 100°C



▲ Non-ferrous Metals



RECOMMENDATION

Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	NORMAL	NORMAL
Copper	ppm	ASTM D5185m	>35	▲ **40**	<1	<1
Visc @ 100°C	cSt	ASTM D445	15.1	▲ **11.1**	14.1	14.2

Customer Id: GFL005
Sample No.: GFL0072384
Lab Number: 05928689
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

09 May 2023 Diag: Don Baldridge

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

03 Jun 2022 Diag: Don Baldridge

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

08 Dec 2021 Diag: Don Baldridge

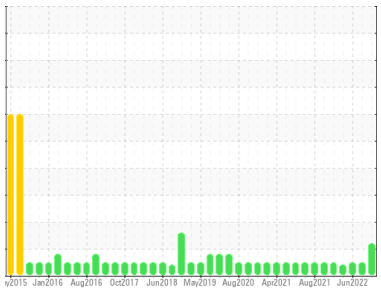
VIS DEBRIS

We suspect abnormal contamination may be due to sampling method. No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. Moderate concentration of visible dirt/debris present in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
3634C
Component
Natural Gas Engine
Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
The copper level is abnormal. All other component wear rates are normal.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0072384**	GFL0072337	GFL0048900
Sample Date		Client Info		**26 Jul 2023**	09 May 2023	03 Jun 2022
Machine Age	hrs	Client Info		**20287**	20287	0
Oil Age	hrs	Client Info		**697**	20287	695
Oil Changed		Client Info		**Changed**	Not Changd	Changed
Sample Status				**ABNORMAL**	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	**18**	15	10
Chromium	ppm	ASTM D5185m	>4	**3**	<1	3
Nickel	ppm	ASTM D5185m	>2	**<1**	<1	0
Titanium	ppm	ASTM D5185m		**<1**	<1	0
Silver	ppm	ASTM D5185m	>3	**<1**	0	<1
Aluminum	ppm	ASTM D5185m	>9	**3**	2	2
Lead	ppm	ASTM D5185m	>30	**12**	<1	<1
Copper	ppm	ASTM D5185m	>35	▲ **40**	<1	<1
Tin	ppm	ASTM D5185m	>4	**<1**	<1	<1
Antimony	ppm	ASTM D5185m		**---**	---	---
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	50	**10**	29	37
Barium	ppm	ASTM D5185m	5	**0**	3	0
Molybdenum	ppm	ASTM D5185m	50	**53**	63	55
Manganese	ppm	ASTM D5185m	0	**1**	2	<1
Magnesium	ppm	ASTM D5185m	560	**799**	663	663
Calcium	ppm	ASTM D5185m	1510	**1098**	1648	1460
Phosphorus	ppm	ASTM D5185m	780	**668**	950	821
Zinc	ppm	ASTM D5185m	870	**871**	1103	999
Sulfur	ppm	ASTM D5185m	2040	**2916**	2805	2800

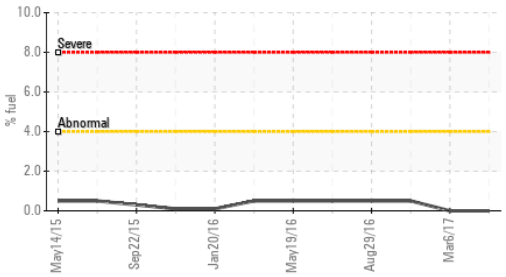
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	**17**	10	5
Sodium	ppm	ASTM D5185m		**53**	4	7
Potassium	ppm	ASTM D5185m	>20	**3**	1	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0
Nitration	Abs/cm	*ASTM D7624	>20	**8.8**	7.4	7.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**22.8**	18.9	18.8

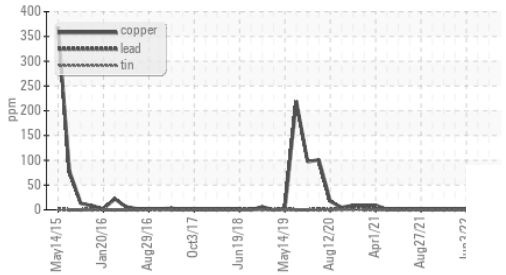
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**14.0**	15.5	15.4
Base Number (BN)	mg KOH/g	ASTM D2896	10.2	**4.2**	8.1	7.9

OIL ANALYSIS REPORT

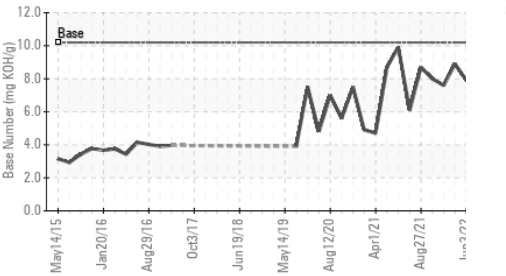
Fuel Dilution



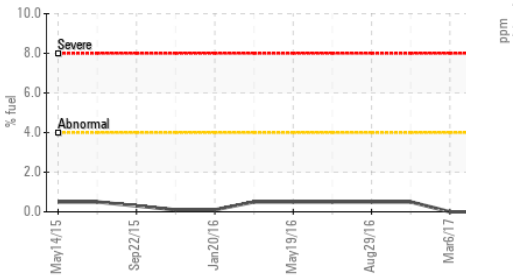
Non-ferrous Metals



Base Number



Fuel Dilution

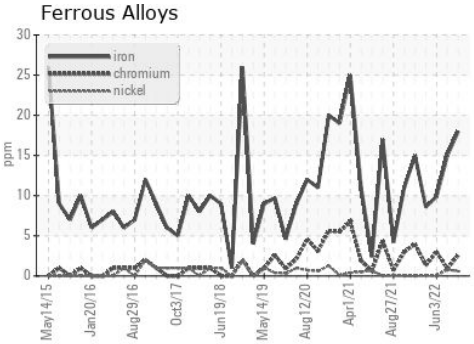


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	LIGHT	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

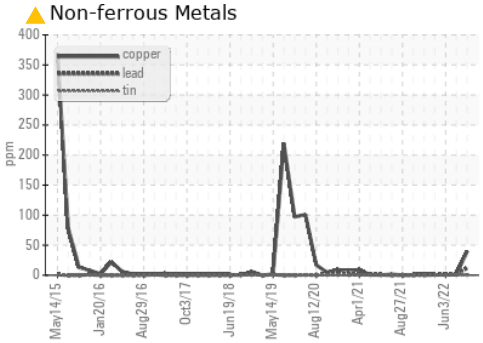
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	▲ **11.1**	14.1	14.2

GRAPHS

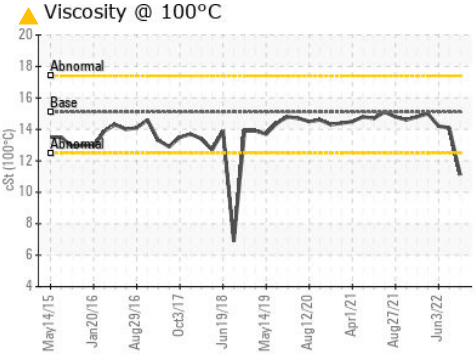
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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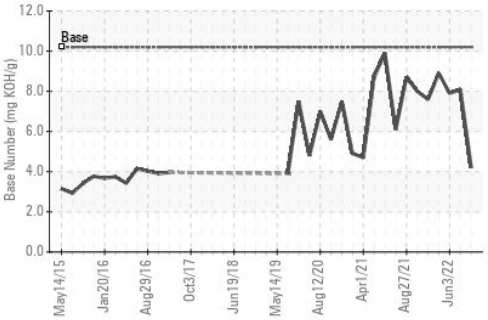

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0072384 **Received** : 18 Aug 2023
Lab Number : 05928689 **Diagnosed** : 22 Aug 2023
Unique Number : 10608636 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: FUELDILUTION)

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

GFL Environmental - 005 - Wilson/Tri-East(CNG)
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Wilson, NC
US 27893-8501
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spencer.liggon@gflenv.com
T: (800)207-6618
F:

Report Id: GFL005 [WUSCAR] 05928689 (Generated: 08/22/2023 12:36:13) Rev: 1

Submitted By: WALTER SKOKOWSKI